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Fact Sheet 2.5

Storm Water Phase II Proposed Rule

Illicit Discharge Detection and Elimination Minimum Control Measure

This fact sheet is based on the Storm Water Phase II Proposed Rule. Therefore, the information provided herein is subject to change upon publication of the final Phase II rule in November 1999. A revised series of fact sheets will be provided at that time. A comprehensive list of the current fact sheets is in the text box at left.

This fact sheet profiles the proposed Illicit Discharge Detection and Elimination minimum control measure, one of six measures the owner or operator of a Phase II regulated small municipal separate storm sewer system (MS4) would be required to include its storm water management program to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Proposed Rule requirements and offers some general guidance on how to satisfy them. It is important to keep in mind that the small MS4 owner or operator would have a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements.

What Is An "Illicit Discharge"?

Federal regulations define an illicit discharge as "...any discharge to an MS4 that is not composed entirely of storm water..." with some exceptions. These exceptions include discharges from NPDES-permitted industrial sources and discharges from fire-fighting activities. Illicit discharges (see Table 1) are considered "illicit" because MS4s are not designed to accept, process, or discharge such non-storm water wastes.

Why Are Illicit Discharge Detection and Elimination Efforts Necessary?

Discharges from MS4s often include wastes and wastewater from non-storm water sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows were from illicit and/or inappropriate discharges and connections to the MS4.

Table 1

Sources of Illicit Discharges
Sanitary wastewater
Effluent from septic tanks
Car wash wastewaters
Improper oil disposal
Radiator flushing disposal
Sump pump discharges
Laundry wastewaters
Spills from roadway accidents
Improper disposal of auto and household toxics

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

Storm Water Phase II Proposed Rule Fact Sheet Series

What Is EPA Proposing?

Recognizing the adverse effects illicit discharges can have on receiving waters, the proposed rule would require an owner or operator of a regulated small MS4 to develop and implement an illicit discharge detection and elimination program. This program would need to include the following:

- ❑ A storm sewer system map showing the location of major pipes, outfalls, and topography. In addition, if such data exist, the map needs to show the areas of concentrated activities that are likely to be sources of pollution;
- ❑ Through an ordinance, order, or similar means, a prohibition (to the extent allowable under State, Tribal, or local law) on illicit discharges into the MS4, and appropriate enforcement procedures and actions;
- ❑ A plan to detect and address illicit discharges, including illegal dumping, into the MS4;
- ❑ The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- ❑ The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Some program implementation approaches, BMPs (i.e., the program actions/activities), and measurable goals are suggested below.

Would This Measure Need to Address All Illicit Discharges?

No. The illicit discharge detection and elimination program would not need to address the following categories of non-storm water discharges or flows unless the owner or operator of the regulated small MS4 identifies them as significant contributors of pollutants to its MS4:

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensation;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Individual residential car washing;
- Flows from riparian habitats and wetlands;
- Dechlorinated swimming pool discharges; and
- Street wash water.

What Are Some Guidelines for Developing and Implementing This Measure?

The objective of the illicit discharge detection and elimination minimum control measure is to have regulated small MS4 owners and operators gain a thorough awareness of their systems. This awareness allows them to determine the types and sources of illicit discharges entering their system, and establish the legal, technical, and educational means to attempt to eliminate these discharges. Permittees could meet these objectives in a variety of ways depending on their individual needs and abilities, but some general guidance for each requirement is provided below.

The Map

The storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular waterbodies these flows may be affecting. Since the location of the major pipes and outfalls could be indicated on an existing topographical map, a new map would not need to be created specifically for this purpose as long as the information is clearly presented on the existing map. The permittee would be allowed to choose the type and size of map that best fits its needs.

EPA recommends collecting all existing information on outfall locations (e.g., review city records, drainage maps, storm drain maps), and then conducting field surveys to verify locations. It probably will be necessary to walk (i.e., wade through small receiving waters or use a boat for larger waters) the streambanks and shorelines for visual observation. It may take more than one trip to locate all outfalls.

Legal Prohibition and Enforcement

EPA recognizes that some permittees may have limited authority under State or Tribal law to establish and enforce an ordinance, or similar means, prohibiting illicit discharges. In such a case, the permittee would be encouraged to obtain the necessary authority, if at all possible. Otherwise, the NPDES permitting authority would assume the responsibility for implementation of this component of the minimum measure, yet the permittee would remain ultimately responsible for the quality of its MS4 discharge. Model ordinances, including examples of amendments to local codes or existing ordinances, will be provided in the Phase II storm water guidance for regulated small MS4s, which is part of EPA's planned implementation "tool box" for the final rule (see Fact Sheet 1.0).

The Plan

The plan to detect and address illicit discharges is the central component of this minimum control measure. The plan would be shaped by several factors, including the permittee's available resources, size of staff, and degree and character of its illicit discharges. EPA envisions a plan similar to the one recommended for use in meeting Michigan's general storm water NPDES permit for small MS4s. As guidance only, the four steps of a recommended plan are outlined below:

❶ **Locate Problem Areas**

EPA recommends that priority areas be identified for detailed screening of the system based on the likelihood of illicit connections (e.g., areas with older sanitary sewer lines). Some methods that could be used to locate problem areas include: public complaints and other input; visual screening; water sampling from manholes and outfalls during dry weather; and use of infrared and thermal photography.

❷ **Find the Source**

Once a problem area or discharge is found, additional efforts usually would be necessary to determine the source of the problem. Some methods that could be used to find the source of the illicit discharge include: dye-testing buildings in problem areas; dye- or smoke-testing buildings at the time of sale; tracing the discharge upstream in the storm sewer; employing a certification program that shows that buildings have been checked for illicit connections; implementing an inspection program of existing septic systems; and using video to inspect the storm sewers.

❸ **Remove/Correct Illicit Connections**

Once the source is identified, the offending discharger would need to be notified and directed to correct the problem. Education efforts and working with the discharger can be effective in resolving the problem before taking legal action.

❹ **Document Actions Taken**

As a final step, all actions taken under the plan should be documented. Doing so would illustrate that progress is being made to eliminate illicit connections and discharges. Documented actions should be included in the required annual reports and include information such as: the number of outfalls screened; any complaints received and corrected; the number of discharges and quantities of flow eliminated; and the number of dye or smoke tests conducted.

Educational Outreach

Educational outreach to public employees, businesses, property owners, the general community, and elected officials would be necessary to inform them of what they could do to detect and eliminate illicit discharges, but it would also help to gain support for the permittee's storm water program. The educational outreach efforts should, at a minimum, include:

- Providing ***training programs*** for public employees;
- Developing ***informative brochures, and guidances*** for specific audiences (e.g., carpet cleaning businesses) and school curricula;
- Designing a program to ***publicize and facilitate public reporting*** of illicit discharges;
- ***Coordinating volunteers*** for locating, and visually inspecting, outfalls or to stencil storm drains; and
- Initiating ***recycling programs*** for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

What Would Be Appropriate Measurable Goals?

Measurable goals, which would be required for each minimum control measure, are meant to help gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, would greatly depend on the needs and characteristics of the owner/operator and the area served by its small MS4. The measurable goals should be chosen using an integrated approach that would fully address the requirements and intent of the minimum control measure. An integrated approach for this minimum measure could include the following measurable goals:

Target Date	Activity
1 year.....	Sewer system map completed; recycling program for household hazardous waste in place.
2 years.....	Ordinance in place; training for public employees completed; a certain percentage of sources of illicit discharges determined.
3 years.....	A certain percentage of: illicit discharges determined; illicit discharges eliminated; and households participating in quarterly household hazardous waste special collection days.
4 years.....	Most illicit discharge sources determined and eliminated.

The educational outreach measurable goals for this minimum control measure could be combined with the measurable goals for the Public Education and Outreach minimum control measure (see Fact Sheet 2.3).

For Additional Information

Contact

☞ U.S. EPA Office of Wastewater Management
- Phone : 202 260-5816
- E-mail: SW2@epa.gov
- Internet: www.epa.gov/owm/sw2.htm

Reference Documents

☞ Storm Water Phase II Proposed Rule Fact Sheet Series.
- Contact the U.S. EPA Water Resource Center at 202 260-7786 or at waterpubs@epa.gov
- Internet: www.epa.gov/owm/sw2.htm

☞ Storm Water Phase II Proposed Rule, published on Jan. 9, 1998 in the *Federal Register* (63 FR 1536).
- Internet: www.epa.gov/owm/sw2.htm

Sources

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